C. Taintor, Esq.; John Thomson, Esq.; Robert Richard Torrens, Esq; Francis Young, Esq.

ACCESSIONS TO THE LIBRARY SINCE THE LAST MEETING, NOV. 12TH, 1866. —'Recherches sur la Longitude de la Côte Orientale de l'Amérique de Sud,' par M. E. Mouchez. 'Report on the Bar and Navigation of the Douro,' by Mr. Consul Crawfurd. 'Eisenbahn- Post- und Dampfschiffs- Karte von Europa,' von Dr. H. Lange. 'Les Polynésiens et leurs Migrations,' par M. de Quatrefages. All presented by the Authors. 'L'Empire du Milieu,' par M. le Marquis de Courcy. Added to the Library by purchase. 'Guide du Baigneur et de l'Etranger à Aix-les-Bains.' 'Notice sur les Chamettes, et sur les Environs de Chambéry.' 'Relation d'un Voyage à Bruxelles et à Coblentz, 1791.' All presented by S. M. Drach, Esq. Continuation of Journals, &c., &c., &c.

ACCESSIONS TO MAP-ROOM SINCE THE LAST MEETING.—Map of Asia Minor, by P. de Tchihatchef, during the years 1847 to 1863; compiled by Dr. Kiepert, and presented by Dr. Petermann. Map of the Central Province of Ceylon, exhibiting the Coffee-plantations, by J. Van Cuyhnturg, 1835; presented by C. R. Markham. Ordnance Maps, 1230 sheets, accompanied by 65 Area Books.

Previous to the Paper of the evening, the following letter from Dr. Livingstone was read:—

"Ngomano, 18th May, 1866.

"When we could not discover a path for camels through the mangrove-swamps of the mouth of the Rovuma, we proceeded about 25 miles to the north of that river, and at the bottom of Mikindany Bay entered a beautiful landlocked harbour called Kinday or Pemba. The entrance seems not more than 300 yards wide, and of these about 150 are deep; the reef on each side of the channel showing so plainly of a light colour that no ship ought to touch. The harbour is somewhat of the shape of the 'spade' on cards, the entrance being like the short handle. There is nearly a mile of space for anchorage, the southern part being from 10 to 14 fathoms, while the north-west portion is shallow and rocky. It is a first-rate harbour for Arab dhows, the land rising nearly all round from 200 to 300 feet. The water is so calm, Arabs can draw their craft to the shore to discharge and take in cargo. They are also completely screened by the masses of trees growing all round it from sea-ward observation.

"The population consists of coast Arabs and their slaves. The six villages in which they live are dotted round the shore, and may contain 300 souls in all. They seemed to be suspicious, and but for our having been accompanied by H.M.S. *Penguin* would have given trouble. The ordinary precaution of placing a sentry over our exposed goods caused a panic, and the sirkar or head-man thought that he gave a crushing reply to my explanations, when he blubbered out, 'But we have no thieves here!'

"Our route hence was s.s.w. to the Rovuma, which we struck at the spot marked on the chart as that at which the *Pioneer* turned in 1861. We

travelled over the same plateau that is seen to flank both sides of the Rovuma like a chain of hills from 400 to 600 feet high. Except where the natives, who are called Makonde, have cleared spaces for cultivation, the whole country, within the influence of the moisture from the ocean, is covered with dense jungle. The trees in general are not large, but they grow so closely together as generally to exclude the sun. In many places they may be said to be woven together by tangled masses of climbing-plants, more resembling the ropes and cables of a ship in inextricable confusion than the graceful creepers with which we are familiar in northern climates. Trade paths have already been made, but we had both to heighten and widen them for camels and buffaloes. The people at the sea-coast had declared that no aid could be got from the natives. When we were 7 miles off, we were agreeably surprised to find that for reasonable wages we could employ any number of carriers and wood-cutters we desired. As they were accustomed to clearing away the gigantic climbers for their garden ground, they whittled away with their tomahawks with remarkable speed and skill. But two days' continuous hard labour was as much as they could stand. It is questionable whether any people (except possibly the Chinese) who are not meat-eaters can endure continuous labour of a kind that brings so many muscles into violent action as this work did. French navvies could not compete with the English, until they were fed exactly like the latter. The Makonde have only fowls, a few goats, and the chance of an occasional gorge of the wild hog of the country.

"Little can be said about the appearance of the country. By the occasional glimpses we got it seemed covered with great masses of dark green foliage, except where the bamboos gave a lighter tint, or a sterculia had changed its leaves to yellow in anticipation of winter. The path we followed sometimes went along or across a 'wady,' in which we were smothered by the grass overhead.

"Such rocks as we could see were undisturbed grey sandstone, capped by ferruginous conglomerate. Upon this we often stumbled against blocks of silicified wood, so like recent wood that anyone would be unwilling to believe at sight that they were stones. This is a sure indication here of coal being underneath, and pieces of it were met in the sands of the river.

"When about 90 miles from the mouth of the Rovuma, the geological structure changes, and with this change we have more open forest, thinner vegetation, and grasses of more reasonable size. The chief rock is now syenite, and patches of fine white dolomite lie upon it in spots. Granitic masses have been shot up over the plain, which extends in front all the way to Ngomano, the confluence of the Rovuma, or Louma, and the Loendi. In the drier country we found that one of those inexplicable droughts had happened over the north bank of the Rovuma, and a tribe of Mazite or Mazitu, probably Zulus, had come down like a swarm of locusts, and carried away all the food above ground as well as what was growing. I had now to make forced marches with the Makonde in quest of provisions for my party, and am now with Matumora or Machumora, the chief at Ngomano, and by sending some 20 miles to the south-west I shall soon obtain succour for them. This is the point of confluence, as the name Mgomano or Ngomano implies, of the Louma and the Loendi. The Loendi is decidedly the parent stream, and comes from the south-west, where in addition to some bold granitic peaks, the dim outline of distant highlands appears. Even at that distance they raise the spirits, but possibly that is caused partly by the fact that we are now about 30 miles beyond our former turning-point and on the threshold of the unexplored.

"I propose to make this my head-quarters till I have felt my way round the north end of Lake Nyassa. If prospects are fair there, I need not return, but trust to another quarter for fresh supplies, but it is best to say little about

the future. Matumora is an intelligent man, and one well-known to be trustworthy. He is appealed to on all hands for his wise decisions, but he has not much real power beyond what his personal character gives him.

"The Makonde are all independent of each other, but they are not devoid of a natural sense of justice. A carrier stole a shirt from one of my men. Our guide pursued him at night, seized him in his own house, and the elders of his village made him pay about four times the value of the article stolen. No other case of theft has occurred. No dues were demanded, and only one fine—a very just one—was levied. Attempts have been made to make the Arabs pay, but they have always been resisted.

"So much has been said about Arab proselytism, that it was with interest inquiries were made about their success in converting the Makonde to the Mahometan faith. Here as elsewhere no attempts to teach had been made. Some Arabs asserted that it would be useless, for the Makonde had no idea of a Deity. On making inquiries about the gum-copal digging, I was shown a tree from which the gum was actually dropping, but they do not dig under the trees at present living. They choose the vicinity, in the belief that near to the modern trees those which yielded what is now considered fossil-gum must have grown. Here they dig; 'and,' said the spokesman, 'the first and second days we may labour in vain, but God may give it us after that.' To this acknowledgment of a Deity all responded. 'It is as He wills it.'

"The experiment with the buffaloes and Tsetse has not been satisfactory; one buffalo and two camels died. Had we not been in a Tsetse country, I should have ascribed this to overwork and bruises received on board the dhow which brought them from Zanzibar. These broke out into large ulcers. The symptoms were not those I have observed in oxen and horses. When stung by gadflies, blood of the arterial colour flows from the punctures. This may be the effect of the Tsetse, for when an ox known to be bitten was killed, its blood was all of the arterial hue. I had but four buffaloes for the experiment, and as three yet remain, I am at present in doubt.

"I write this short sketch in haste for an Arab who is passing down to the coast.

"DAVID LIVINGSTONE."

The PRESIDENT remarked that every geographer must be deeply interested in the ultimate result of this great expedition. The first point which Dr. Livingstone had to determine, after establishing a good base of operations, which he had succeeded in doing by making a friend of the influential chief of Ngomano, and ensuring supplies, was to advance to the northern end of Lake Nyassa. Afterwards turning to the north, he would endeavour to set at rest the question of the hydrography of that region. His object was to ascertain whether the waters flowed out of the Lake of Tanganyika towards the south, as Burton and Speke seemed to think when they examined that lake; or whether it might not turn out the reverse, namely, that the Lake Nyassa was completely closed to the north, and that the waters of the Tanganyika communicated northward. If he reached that lake, he would descend it in boats, to build which he had taken carpenters with him. When Burton and Speke were on the Tanganyika, they were both in extreme ill-health, and almost blind; so that their observations were necessarily imperfect, and the altitude of the lake, which they had fixed at about 1800 feet, had been very much doubted. There were geographers who thought the lake lay at a greater elevation; and as it was in the meridian of the vast lake discovered by Baker they conjectured that there might be a communication between the two. This was the great problem which Livingstone had to work out; and if it should be solved in the way suggested, then the lake Tanganyika would prove to be the ultimate head of the water system of the Nile. From Livingstone's well-known per-

severance and determination, and his success in making friends with the natives, he (the President) had every confidence that he, of all men alive, was the man most able to solve these difficult problems.

Colonel PLAYFAIR said the port north of the mouth of the Rovuma, which Livingstone had described, was one of which he had no personal knowledge; he should not, however, be surprised to hear of other harbours being discovered along that coast, for it had been most imperfectly surveyed. Only about a year ago an excellent harbour had been found by the Sultan of Zanzibar on the mainland, opposite the island; and he was now endeavouring to build a town there, but it is more than doubtful whether the experiment will succeed.

The following Paper was read:—

On the Physical Geography and Climate of Natal. By R. J. MANN, Esq., M.D., F.R.G.S., Superintendent of Education in Natal.

THE author exhibited numerous diagrams and maps in illustration of his subject, with a view to show how the peculiar climate and fertility of Natal depends upon its physical configuration. The colony is a portion of the narrow bevelled rim of the African continent, whose vast interior is an elevated table-land, with its coast presented to the moist winds of the Indian Ocean, and its interior frontier formed by the Drakenberg mountain-ledge, 7000 to 9000 feet high. In the northern part of the colony this mountain-ledge curves inwards, and from this hollow or bay the waters are gathered into one large river, the Tugela. From the salient point of the angular line of the Drakenberg, a mountain ridge projects into the middle of the colony, forming a high central backbone, from which short lateral spurs jut out. Each deep valley between these fingered ridges and to the south has its stream, and no less than fifty separate rivers find their way to the coast. These two distinct river systems of the colony—the one-rivered and the many-rivered—were necessarily caused by the zigzag direction of the great interior mountain frontier. There is a general slope upwards from the sea towards the interior; the gradient for the first 70 miles being 1 in 70. Up this slope the sea-breezes, impelled by a combined trade-wind and monsoon agency, blow almost continually, but most strongly in the summer, owing to the greater power of the sun on the land at this time, and it is in this season that most rain falls; the moisture-laden air, on reaching the heights, being no longer able to retain its humidity, discharges it in almost daily showers. Thus all the summer long the heat is tempered by clouds and the land fertilized by constant rains. During the winter, on the other hand, when the monsoon agency is at its least, there is almost perpetual sunshine and the weather is dry. The summer rainfall, as